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EXAMINER

RODRIGUEZ, RUTH C

ART UNIT

PAPER NUMBER

3677

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,445

Applicant(s)

SCHWARZBICH, JORG

Examiner

Ruth C Rodriguez

Art Unit

3677

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 February 2004 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the solid cylindrical roll that supports and inner surface of the hollow body must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 9, 10, 15, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauptman (US 3,402,574) in view of Zernickel (US 6,350,203 B1).

Hauptman discloses a telescopic mechanism (11,12) comprises an internal element (11), an external element (12) and roll barrels (18). The external element is complementary to the internal element (Figs. 1 and 2). The internal element and the external element are movable relative to each other in an axial direction (C. 1. L. 21-25). The roll barrels guide the internal element in the external element. The roll barrels are oriented substantially transverse to the axial direction of movement between the external element and the internal element and which transmits a steering torque between the internal element and the external element (C. 1, L. 21-25 and Figs. 1 and 2). At least some of the roll barrels are constructed as hollow elastic bodies which are elastically deformable (Figs. 1 and 2). Hauptman fails to disclose that the internal element has a flattening at least on one side where the roll barrels are located at the flattening. However, Zernickel teaches a telescopic mechanism (1,9,21) comprising an internal element (2,10,17), an external element (3,11,19) and bearings (14). The internal element has a flattening at least on one side (Figs. 1-3). The bearings guide the internal element in the external element. The flattening ensures that the forces resulting from the torque introduction area uniformly distributed on all the loaded zones

of the bearing (C. 4, L. 47-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the internal element of the telescopic mechanism provided with a flattening on at least one side of the internal element as taught by Zernickel in the telescoping mechanism disclosed by Hauptman where the roll barrels will be located at the flattening. Doing so, ensures that the forces resulting from the torque introduction are uniformly distributed on all the loaded zones of the bearings.

The hollow bodies disclosed by Hauptman are helical springs (18).

Hauptman also discloses that the helical springs are tensile springs having coils which in an unstressed state, lie against one another on block (C. 2,L. 1-10 and Figs. 1-3).

Zernickel also teaches that the internal element has a polygonal external cross section and forms several flattenings that are supported in each case over a set of bearings at a corresponding flattening of an inner cross section of the external element. When the combination of Hauptman and Zernickel is taken into consideration, the bearings will be hollow bodies disclosed by Hauptman.

Hauptman also discloses that the telescopic mechanism further comprises a cage (16) that holds the hollow bodies and fills a space between the internal element and the external element with little clearance and forms a boundary for deformation of an external cross section of the hollow bodies (Figs. 1-3).

5. Claims 4, 13, 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauptman/Zernickel as applied to claims 2, 3 and 21 above, and further in view of British Patent Document GB 530,342.

The combination of Hauptman and Zernickel used above in paragraph 4 for the rejection of claims 2 and 3 fails to disclose that the helical springs are formed from spring steel with a rectangular cross section. However, British Patent Document GB 530, 342 (GB '342) demonstrates the use of hollow bodies that are elastically deformable as bearings for a vehicle. The helical springs are formed from spring steel with a rectangular cross section (P. 3, L. 25-29 and Fig. 4). The hollow bodies used as bearings are very useful because they are flexible and when assuming the oval shape they reduce possible indentations (P. 2, L. 33-38). Therefore, it would have being obvious to one having ordinary skill in the art at the time of applicant's invention to have the hollow bodies that are elastically deformable as demonstrated by GB '342 in the mechanism disclosed by Hauptman and modified by Zernickel. Doing so, provides great flexibility when assuming the oval shape thereby reducing possible indentations in the internal or external elements while also providing a reduction in the weight (Page 2, L. 16-20).

GB '342 also demonstrates that the roll barrel bearings further comprises a solid cylindrical roll (20) that supports the inner surface of the hollow body with clearance limits elastic deformation of an outer cross section of the hollow body and is inserted into at least one of the hollow bodies (Fig. 4).

6. Claims 5, 16, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asher (US 3,365,914) in view of Zernickel (US 6,350,203 B1).

Asher discloses a telescopic mechanism (14,10) comprises an internal element (14), an external element (10) and roll barrels (16). The internal element has a substantially flat surface on at least one side (Fig. 1). The external element is complementary to the internal element (Figs. 1 and 2). The internal element and the external element are movable relative to each other in an axial direction (C. 1. L. 13-19). The roll barrels guide the internal element in the external element (Figs. 1 and 2). The roll barrels are oriented substantially transverse to the axial direction of movement between the external element and the internal element and which transmits a steering torque between the internal element and the external element (C. 1, L. 13-19 and Figs. 1 and 2). At least some of the roll barrels are constructed as hollow elastic bodies which are elastically deformable (C. 2, L. 62-66 and Figs. 1 and 2). Asher fails to disclose that the internal element has a flattening at least on one side where the roll barrels are located at the flattening. However, Zernickel teaches a telescopic mechanism (1,9,21) comprising an internal element (2,10,17), an external element (3,11,19) and bearings (14). The internal element has a flattening at least on one side (Figs. 1-3). The bearings guide the internal element in the external element. The flattening ensures that the forces resulting from the torque introduction area uniformly distributed on all the loaded zones of the bearing (C. 4, L. 47-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the internal element of the telescopic mechanism provided with a

flattening on at least one side of the internal element as taught by Zernickel in the telescoping mechanism disclosed by Asher where the roll barrels will be located at the flattening. Doing so, ensures that the forces resulting from the torque introduction are uniformly distributed on all the loaded zones of the bearings.

The hollow bodies disclosed by Asher are hollow cylinders (C. 2, L. 57-62 and Fig. 2).

Zernickel also teaches that the internal element has a polygonal external cross section and forms several flattenings that are supported in each case over a set of bearings at a corresponding flattening of an inner cross section of the external element. When the combination of Asher and Zernickel is taken into consideration, the bearings will be hollow bodies disclosed by Asher.

Asher also discloses that the telescopic mechanism further comprises a cage (18) that holds the hollow bodies and fills a space between the internal element and the external element with little clearance and forms a boundary for deformation of an external cross section of the hollow bodies (Figs. 1 and 2).

7. Claims 6-8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asher/Zernickel as applied to claim 21 above, and further in view of Wells (US 1,617,613).

The combination of Asher and Zernickel discloses a telescopic mechanism as described above in paragraph 6 for the rejection of claim 21. Asher and Zernickel fail to disclose that the hollow bodies are formed by rolled-up blanks. However, Wells demonstrates how bearings can be formed as hollow cylinders (20) by a rolled-up blank

such that the ends of the blank abut one another with formation of a seam. Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have hollow cylinders made of by a rolled-up blank such that the ends of the blank abut one another with formation of a seam that extends obliquely to an axis of the respective hollow body as taught by Wells in the mechanism disclosed by Asher and modified by Zernickel. Doing so, is known in the art as taught by Wells and by providing a seam that extends obliquely to an axis of the respective hollow body the natural resiliency of the hollow body will be distributed along the entire oblique extension of the seam instead of being distributed along a straight line seam.

Wells also demonstrates that:

- The seam extends obliquely to an axis of the respective hollow body (Figs. 1-6).
- The seam extends around the respective hollow cylinder at least once (Figs. 1-6).
- A solid cylindrical roll (18) that supports the inner surface of the hollow body with clearance limits elastic deformation of an outer cross section of the hollow body and is inserted into at least one of the hollow bodies (Figs. 1 and 2).

8. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauptman/Zernickel as applied to claim 10 above, and further in view of Lennon et al. (US 5,345,679).

The combination of Hauptman and Zernickel, used above in paragraph 4 for the rejection of claim 10, fails to disclose that the cage forms several thickened section that

in each case are assigned to a flattening of the internal element and accommodate a set of hollow bodies and are connected with one another by cross members. However, Lennon teaches a cage (34) for bearings (32) made from a plastic sleeve blank provided with flexible cross members (60). The cage forms several thickened section that in each case are assigned to accommodate a set of bearings and are connected to one another by the cross members. The flexible cross members made to assure that the cage conforms to the shaped of the between the inner element (18) and the outer element (20) (C. 3, L. 53-51). Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to have a cage with the flexible cross members taught by Lennon in the telescopic mechanism disclosed by Hauptman and modified by Zernickel. Doing so, conforms the shape of the cage to the shaped of the between the inner element and the outer element.

The cage taught by Lennon is an injection-molded part (C. 2, L. 50-57) that is produced as a stretched tape and is bent at the cross members into a shape corresponding to the external cross section of the internal element (Figs. 1-3F).

Response to Arguments

9. Applicant's arguments with respect to claims 2-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is included in Form PTO 892-References cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth C. Rodriguez whose telephone number is (703) 308-1881. The examiner can normally be reached on M-F 07:15 - 15:45.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on (703) 306-4115.

Submissions of your responses by facsimile transmission are encouraged. Technology center 3600's facsimile number for before and after final communications is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Ruth C. Rodriguez
Patent Examiner
Art Unit 3677

ReR
rcr
April 19, 2004


ROBERT J. SANDY
PRIMARY EXAMINER